

CENTRAL VALLEY ENERGY CENTER (01-AFC-22)
DATA REQUESTS – SET 2

Technical Area: Air Quality

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BACKGROUND

The air dispersion input/output modeling files provided electronically with the AFC appear to contain a few discrepancies and/or errors. Staff needs additional information to access the modeling files.

DATA REQUEST

146. The PM₁₀ 24-hour and annual modeling files appear to have been revised on 11/14/01. The modeling files provided for PM₁₀ 24-hour and annual are dated 10/14/01. Please provide copies of the latest PM₁₀ 24-hour and annual input/output modeling files, or explain this apparent discrepancy.
147. NO₂ startup emissions per turbine, from file NO21STRT.IN, do not correspond to the 80 lb/hr provided in Table 8.1A-8. A value of 30.240 g/s per turbine is used in the modeling file, which equals 240.0 lb/hr per turbine. Please remodel the NO₂ startup condition or update Table 8.1A-8 to reflect a consistent design basis. If remodeling is required, please provide all updated input/output modeling files.
148. EPA approved ISC-OLM was used for determining the NO₂ impacts during commissioning. This model is generally used for determining short-term (1-hour) impacts during construction. The NO₂/NO_x ratio used in the ISC-OLM model is 0.1, which represents diesel engines. This ratio is lower than the ratio that is expected for turbines. Please revise the NO₂ commissioning modeling file using a more appropriate NO₂/NO_x ratio of 0.25 to more accurately represent the turbines. Please provide updated input/output modeling files.
149. The annual NO_x emissions rate for each Heat Recovery Steam Generator (HRSG) provided in Table 8.1B-5 is 2.538 g/s. The annual NO_x emissions rate used for each HRSG (3 total) is 2.538 g/s, 2.538 g/s, and 2.588 g/s as shown in the following modeling files: NOXAN92.IN, NOXAN93.IN, NOXAN94.IN, NOXAN95.IN, and NOXAN97.IN. These should all have equal emissions rates of 2.538 g/s. Please confirm that the 2.588 g/s value in the modeling files is a typographical error.

CENTRAL VALLEY ENERGY CENTER (01-AFC-22)
DATA REQUESTS – SET 2

BACKGROUND

The maximum emission rates expected to occur during a startup or shutdown are shown in Table 8.1-20 (AFC page 8.1-26). The values for NO_x, CO, and VOC were estimated based on vendor data and source test data provided in Appendix 8.1A, Table 8.1A-7a and 7b. Staff needs clarification for the startup and shutdown basis provided.

DATA REQUEST

150. The generating facility will consist of three Siemens-Westinghouse 501FD combustion turbines. Westinghouse provided data for the total plant (3 turbines) on a lb/start basis. The values provided in Table 8.1A-7a were calculated assuming a 3-hour starting period per turbine for a cold start; 2 hours for a warm start; and 1 hour for a hot start. The startup/shutdown emissions values used in the AFC, however, are significantly lower than those provided by Westinghouse. Please explain the basis for the startup/shutdown emission rates used in the AFC.

BACKGROUND

Staff has several questions regarding the first round of air quality Data Responses (#1 through #28). Staff needs clarification of these responses in order to complete its assessment of the project

DATA REQUEST

151. Data Response 5 indicated that there was no specific construction schedule. Data Response 6 indicates that a construction schedule of 7 am to 5 pm was used in the modeling analysis for equipment fugitive dust and tailpipe emissions. Staff is concerned that these two responses conflict, and that the 7 am to 5 pm schedule used in the modeling analysis may cause the underestimation of potential construction impacts, particularly if this schedule is not related to the anticipated construction schedule. Please provide the basis for the use of the 7 am to 5 pm construction schedule in the construction modeling files, and identify why other hours of the day should not be modeled.
152. Data Response 13 is not clear. Please identify the concentrations and averaging times that are being proposed to meet BACT for NO_x and CO. Please confirm that these values will be considered BACT by USEPA for this project.
153. Data Response 14 did not completely answer the question posed. Please identify if increasing the SCR catalyst surface area would reduce the ammonia slip level while maintaining the NO_x control efficiency requirement, which would allow a 5 ppm NH₃ slip level to be met.

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DATA REQUESTS – SET 2

154. All the NO_x ERC Certificate numbers and quarterly amounts summarized in Data Adequacy Response Attachment 12-AQ-9, “Summary of Total Offsets Required and Available” (December 20, 2001), match the NO_x ERC Certificates provided in Data Response, Set 1A, Attachment AQ-15, except for S-1554-2. No ERC certificate is provided for S-1554-2. Instead, ERC Certificate S-1544-2 is provided. ERC S-1544-2 was issued to Pastoria Energy Facility, LLC for NO_x reduction in the following quarterly amounts: Q1 - 3,384 lbs., Q2 - 2,194 lbs., Q3 - 2,118 lbs., and Q4 - 3,141 lbs. Attachment 12-AQ-9 shows ERC Certificate S-1554-2 for NO_x reduction in the following quarterly amounts: Q1 – 185,147 lbs., Q2 – 188,556 lbs., Q3 – 191,964 lbs., and Q4 – 191,964 lbs. It is also notes that S-1554-2 reflects excess over quantity required for the Pastoria project. Please verify whether ERC S-1544-2 or S-1554-2 is used, and fully explain any difference in quarterly emissions shown on the certificate compared to the amounts used in the emissions offset calculation.
155. Data Adequacy Response Attachment 12-AQ-9, “Summary of Total Offsets Required and Available” (December 20, 2001), shows ERC Certificate S-1577-4 for PM₁₀ reduction having 480 lbs in the 1st quarter. Data Response, Set 1A, Attachment AQ-15, shows ERC Certificate S-1577-4 for PM₁₀ reduction having 489 lbs in the 1st quarter. Will the excess of 9 lbs in the 1st quarter remain available for other projects?
156. Data Response 20 uses the term “compliant CTG”. Staff needs to understand what type of “compliance” is being related to by this term. Please define this term.
157. From Attachment AQ-21 and the associated notes (also provided in larger font as Attachment AQ-24) the basis for hot start NO_x and VOC emissions match the facility startup/shutdown emission rates (lb/hr) provided in AFC Table 8.1-20, page 8.1-26. The basis for hot start CO emissions of 838 lb/hr, however, does not match the startup/shutdown emissions rate of 902 lb/hr provided in AFC Table 8.1-20. CO emissions of 838 lb/hr correspond to the Sutter Project cold start CO emissions provided in AFC Appendix 8, Table 8.1A-7a, page 8.1A-7. CO emissions of 902 lb/hr from AFC Table 8.1-20 correspond to the Sutter Project hot start CO emissions. Please confirm the commissioning basis for CO emissions and update the gas turbine/HRSG commissioning profile as necessary.
158. Data Response 25, as provided in Attachment AQ-25, is incomplete. The list provided does not include the requested: 1) location of the facility, 2) the local permitting district for the facility, and 3) whether the facility has a separate PSD permit issued by USEPA. Additionally, the form used for Attachment AQ-25 appears to be incorrect considering that the CVEC facility is being permitted by SJVAPCD and not the BAAQMD.